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09/606,326	06/29/2000	David Carmel	6727/OH370	7023

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New York, NY 10022

EXAMINER

SPOONER, LAMONT M

ART UNIT	PAPER NUMBER
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2654

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DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,326

Applicant(s)

CARMEL ET AL.

Examiner

Lamont M Spooner

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Jacquemin et al. (U.S. Patent No. 6,101,492 filed Aug. 8, 2000).

As per **claims 1, 22 and 29**, Jacquemin et al. discloses a method for morphological disambiguation comprising:

receiving an input string (C.10.lines 61, 62)

morphologically analyzing the string (C.10.lines 61, 62) to generate a list of candidate analyses of the string, each candidate analysis comprising a respective word and a linguistic pattern of the word (C.10.lines 62-65); and

evaluating the pattern of each of the analyses against a predefined criterion in order to select one or more of the analyses from the list (C.11.lines 6-11).

As per **claims 4, 25 and 32**, Jacquemin et al. discloses all of the limitations of claim 1 on which claim 4 depends. Jacquemin et al. further discloses:

the linguistic pattern comprises a specification of at least one characteristic of the word, selected from a set of characteristics including a part of speech, prefix, number, gender and person of the word (C.11.lines 27,28).

As per **claim 5**, Jacquemin et al. discloses all of the limitations of claim 4 on which claim 5 depends. Jacquemin et al. further discloses:

the specification of the at least one characteristic comprises a specification of all of the characteristics in the set (C.11.lines 24-27).

As per **claim 6**, Jacquemin et al. discloses all of the limitations of claim 5 on which claim 6 depends. Jacquemin et al. further discloses:

when the base word comprises a verb, the linguistic pattern further comprises a designation of a tense and conjugation pattern of the verb (C.11.31-35).

As per **claim 7**, Jacquemin et al. discloses all of the limitations of claim 1 on which claim 7 depends. Jacquemin et al. further discloses:

each of the analyses has a lemma and a paradigm determined by the word and the linguistic pattern thereof (C.11.lines 5-7), and wherein evaluating the pattern comprises eliminating one of the analyses from the list if it has the same lemma and paradigm as another of the analyses (C.11.lines 1-3).

As per **claim 13, 26 and 33**, Jacquemin et al. discloses all of the limitations of claim 1 on which claim 13 depends. Jacquemin et al. further discloses:

searching in a corpus of text for a match to the input string using the one or more selected analyses (C.11.lines 10-14).

As per **claim 14**, Jacquemin et al. discloses all of the limitations of claim 1 on which claim 14 depends. Jacquemin et al. further discloses:

checking for spelling errors in the input string using the one or more selected analyses (C.12.lines 23-26).

As per **claims 15, 27 and 34**, Jacquemin et al. discloses:

A method for searching a corpus of text made up of words (C.10.lines 11,12), comprising:

morphologically analyzing the words in the corpus to generate, for each of at least some of the words (C.5.lines 56-58), a list of candidate analyses, each candidate analysis comprising a respective lemma and a linguistic pattern relating the lemma to the analyzed word (C.11.lines 5-9);

evaluating the pattern of each of the analyses against a predefined criterion in order to select one or more of the analyses from the list for each of the analyzed words (C.11.lines 11-14);

entering the lemmas of the selected analyses in an index of the corpus (C.5.lines 65-67, C.11.lines 11,12); and

applying a search query to the index (C.11.lines 11, 12).

As per **claims 16, 28 and 35**, Jacquemin et al. discloses all of the limitations of claim 15 on which claim 16 depends. Jacquemin et al. further discloses:

receiving an input text string (C.11.lines 22, 23);

morphologically analyzing and disambiguating the string to generate one or more search lemmas for the string (C.11.lines 24-27, 45); and

comparing the search lemmas to the index (C.11.lines 11,12).

As per **claim 19**, Jacquemin et al. discloses all of the limitations of claim 15 on which claim 19 depends. Jacquemin et al. further discloses:

the linguistic pattern comprises a specification of at least one characteristic of the word, selected from a set of characteristics including a part of speech, prefix, number, gender and person of the word (C.11.lines 27, 28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 3, 17, 18, 23, 24, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquemin et al.

As per **claims 2, 3, 23, 24, 30, and 31**, Jacquemin et al. discloses all of the limitations of claim 1 on which claims 2 and 3 depend. Jacquemin et al. further discloses:

the method to be language independent (C.12.lines 38-40).

Therefore, it would have been obvious to one skilled in the art to choose Hebrew, as Semitic language as the input. The motivation for doing so would have been to expand the language selection options.

As per **claims 17, 18**, Jacquemin et al. discloses all of the limitations of claim 15 on which claims 17 and 18 depend. Jacquemin et al. further discloses:

the method to be language independent (C.12.lines 38-40).

Therefore, it would have been obvious to one skilled in the art to choose Hebrew, as Semitic language as the input. The motivation for doing so would have been to expand the language selection options.

3. Claims 8, 9, 10, 11, 12, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquemin et al. in view of Chanod et al. (U.S. Patent No. 6,393,389 filed Sep. 23, 1999).

Jacquemin et al. and Chanod et al. are analogous art in that they are both of the language information retrieval field.

As per **claim 8**, Jacquemin et al. discloses all of the limitations of claim 1, on which claim 8 depends. Jacquemin et al. does not disclose:

evaluating the pattern comprises determining a relative frequency of occurrence of the pattern of each of the analyses, and selecting the at least one of the analyses whose frequency of occurrence is above a predetermined threshold.

Chanod et al. teaches of evaluating a pattern comprising a method of determining a relative frequency of occurrence (C.22.lines 30, 31) of the pattern of each of the analyses, and selecting the at least one of the analyses whose frequency of occurrence is above a predetermined threshold (C.22.lines 32, 33).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. The motivation for doing so would have been to select a desired morphological analysis or analyses by method of comparison to a threshold because in that way a limit would have been set for the desired selection.

As per **claim 9**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 8, on which claim 9 depends. Jacquemin et al. does not disclose:

determining the relative frequency of occurrence comprises analyzing a corpus of text and finding the frequency of occurrence of the pattern in the corpus.

Chanod et al. teaches of determining the relative frequency of occurrence comprises morphologically analyzing a corpus of text (C.22.lines 25, 26) and finding the frequency of occurrence of the pattern in the corpus (C.22.lines 30-34).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. The motivation for doing so would have been to morphologically analyze a corpus in order to obtain the frequency of occurrence of analyses because in order to determine the frequency of occurrence the text or corpus must be analyzed, and the morphological analyses is well suited for determining the pattern.

As per **claim 10**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 9, on which claim 10 depends. Jacquemin et al. does not disclose:

determining the relative frequency of occurrence comprises storing in a table the frequency of occurrence found in the corpus, and looking up the pattern in the table

Chanod et al. teaches of determining the relative frequency of occurrence comprises storing in a table the frequency of occurrence found in the corpus (C.22.lines, 30-33), and looking up the pattern in the table (C.22.lines 28, 29).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. for the purposes of having the ability to look up the

morphological analyses in a list because in that way access to the desired analyses is then becomes accessible.

As per **claim 11**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 8, on which claim 11 depends. Jacquemin et al. does not disclose:

selecting the at least one of the analyses comprises setting the threshold so as to control how many of the analyses from the list are selected.

Chanod et al. teaches of selecting the at least one of the analyses comprises setting the threshold so as to control how many of the analyses from the list are selected (C.22.lines 23, 24).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. The motivation for doing so would have been to obtain desired analyses above a predetermined threshold, however having a way of limiting the amount of analyses from the list to be selected so as not to have many more analyses than that desired appear.

As per **claim 12**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 8, on which claim 12 depends. Jacquemin et al. does not disclose:

selecting the at least one of the analyses comprises selecting the at least one of the analyses based on the pattern thereof, and substantially independently of the respective word.

Chanod et al. teaches of selecting the at least one of the analyses comprises selecting the at least one of the analyses based on the pattern thereof, and substantially independently of the respective word (C.22.lines 28, 29).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. The motivation for doing so would have been to obtain a desired analysis above a predetermined threshold and selecting at least one of the analyses based on it's pattern because this would limit the amount of analyses to the desired amount and selecting according to the pattern which would increase the chances of finding the desired information.

As per **claim 20**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 15, on which claim 20 depends. Jacquemin et al. does not disclose:

evaluating the pattern comprises determining a relative frequency of occurrence of the pattern of each of the analyses, and selecting the at least one of the analyses whose frequency of occurrence is above a predetermined threshold.

Chanod et al teaches of evaluating the pattern comprises determining a relative frequency of occurrence of the pattern (C.22.lines 30, 31) of each of the analyses, and selecting the at least one of the analyses whose frequency of occurrence is above a predetermined threshold (C.22.lines 30, 31).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. for the purposes of determining a relative frequency of occurrence from a morphologically analyzed, indexed, lemmatized corpus, and selecting at least one analysis/analyses that has a frequency above a predetermined threshold, because this would order and make easily accessible the desired selection of information.

As per **claim 21**, Jacquemin et al. and Chanod et al. disclose all of the limitations of claim 20, on which claim 21 depends. Jacquemin et al. does not disclose:

selecting the at least one of the analyses comprises selecting the at least one of the analyses based on the pattern thereof, and substantially independently of the respective word.

Chanod et al. teaches of selecting the at least one of the analyses comprises selecting the at least one of the analyses based on the pattern thereof, and substantially independently of the respective word (C.22.lines 28, 29).

Therefore it would have been obvious to one skilled in the art to combine Jacquemin et al. with Chanod et al. The motivation for doing so would have been to obtain a desired analysis above a predetermined threshold and selecting at least one of the analyses based on it's pattern because this would limit the amount of analyses to the desired amount and selecting according to the pattern which would increase the chances of finding the desired information.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Anick et al. (U.S. Patent 5,559,693 Sep. 24, 1996) teaches of morphologically analyzing a corpus and specifying inflectional paradigms.
- van den Akker (U.S. Patent No. 6,415,250 Jul. 2, 2002) teaches of determining morphologic frequency components from and corpus.

Art Unit: 2654

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M Spooner whose telephone number is 703/305-8661. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on 703/306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703/305/9508.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703/305-3900.

lms
11/19/03



TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER